A New England Biotech Research Facility

A Case Study in Progress

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The Challenge

- Deliver construction documents for permit in 28 days
- Compress the approvals process from 18 to 6 months
- Contend with demolition of an historic structure
- Mitigate hazardous waste
- Start construction within 6 months
- Establish real estate as a profit center vs. a cost center
- Establish a positive image of the biotech company as a corporate citizen
- Design within the biotech's culture

Hallmarks of Hyper-Track

- "Individuals makes mistakes, teams rarely do…"
- Principals at every meeting - to make decisions and commit resources
- Client-centered process (literally)
- Have a driver ("the patients are waiting")
- Ubiquitous communications (e-mail, project website)
- Simplify the accounting (all T&M)
- Pay attention to team building (lunches, dinners, ball games,cruises)
- Schedule "decision-making" rather than "deliverables"
- Think - and act - outside the box
- Use *everybody* on the team - let them all contribute
- All decisions based on "value to client"

Fast-Track Vs. Hyper-Track

- Fast-Track keeps the same phases, but overlaps them

  Hyper-Track eliminates the phases

- Fast-Track keeps traditional roles & relationships

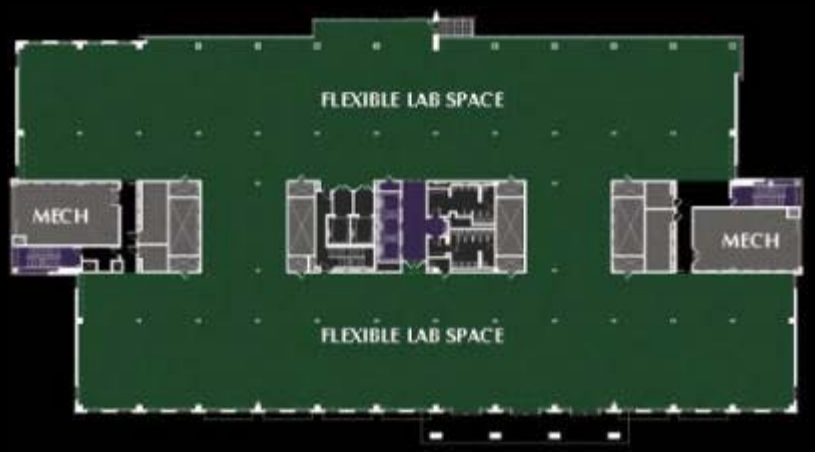
  Hyper-Track makes all decision-makers simultaneous and co-equal

- Fast-Track focuses on speed

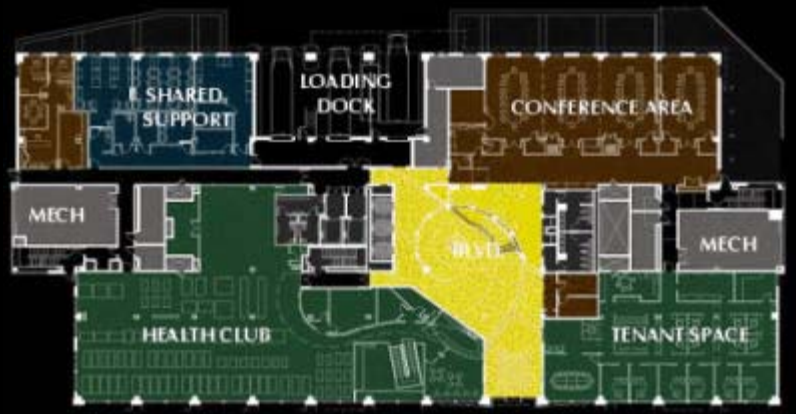
  Hyper-Track focuses on value

- Fast-Track focuses on deliverables (the drawings)

  Hyper-Track focuses on the outcome (the science)



Typical Floor Plan



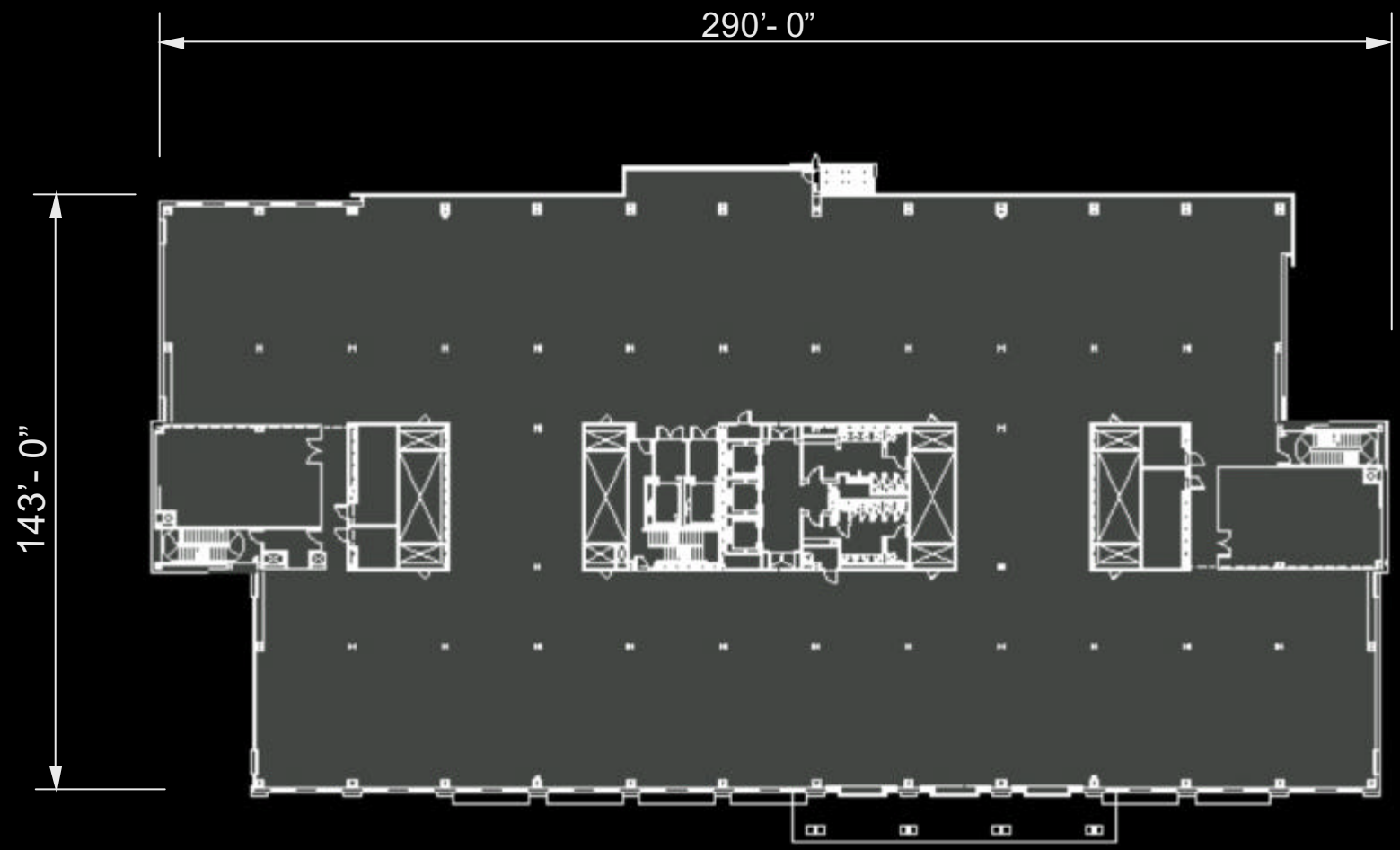
Ground Floor Plan

The Results

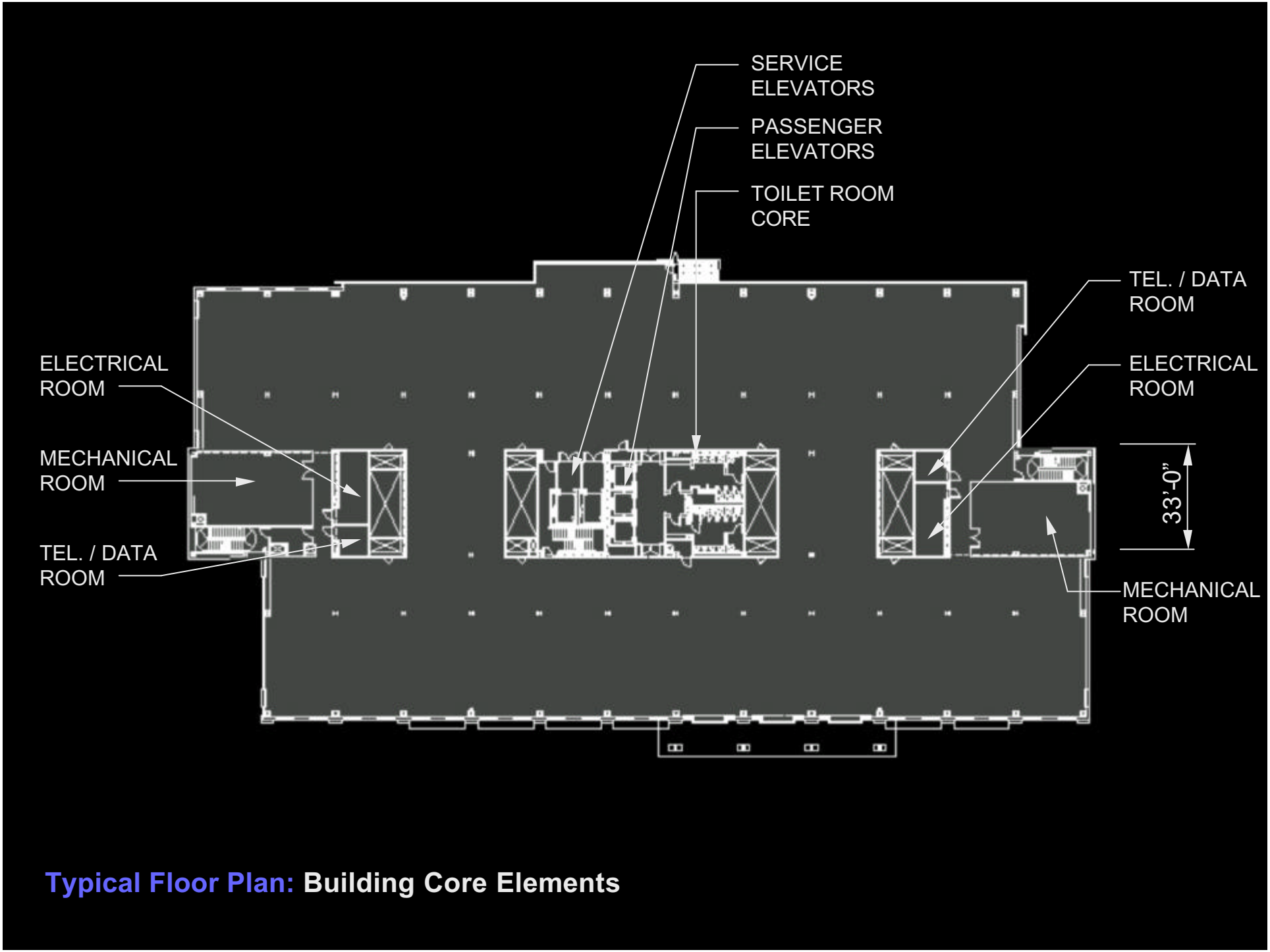
- Permit set delivered in 28 days
- Approvals granted in 5 months, 17 days
- Construction started in 5 months, 18 days
- Shell & core budgeted at $150/sf; delivered at $141/sf
- New standards set during approvals process (traffic report format)
- Space utilization exceeds 85% (normal range is 55-60%)
- “Distributed mechanical system”
- Approved project scope was 363,000 sf (vs. 285,000 sf zoning envelope)
- Professional fees were lower than average, but profits were higher

Proof Of The Pudding

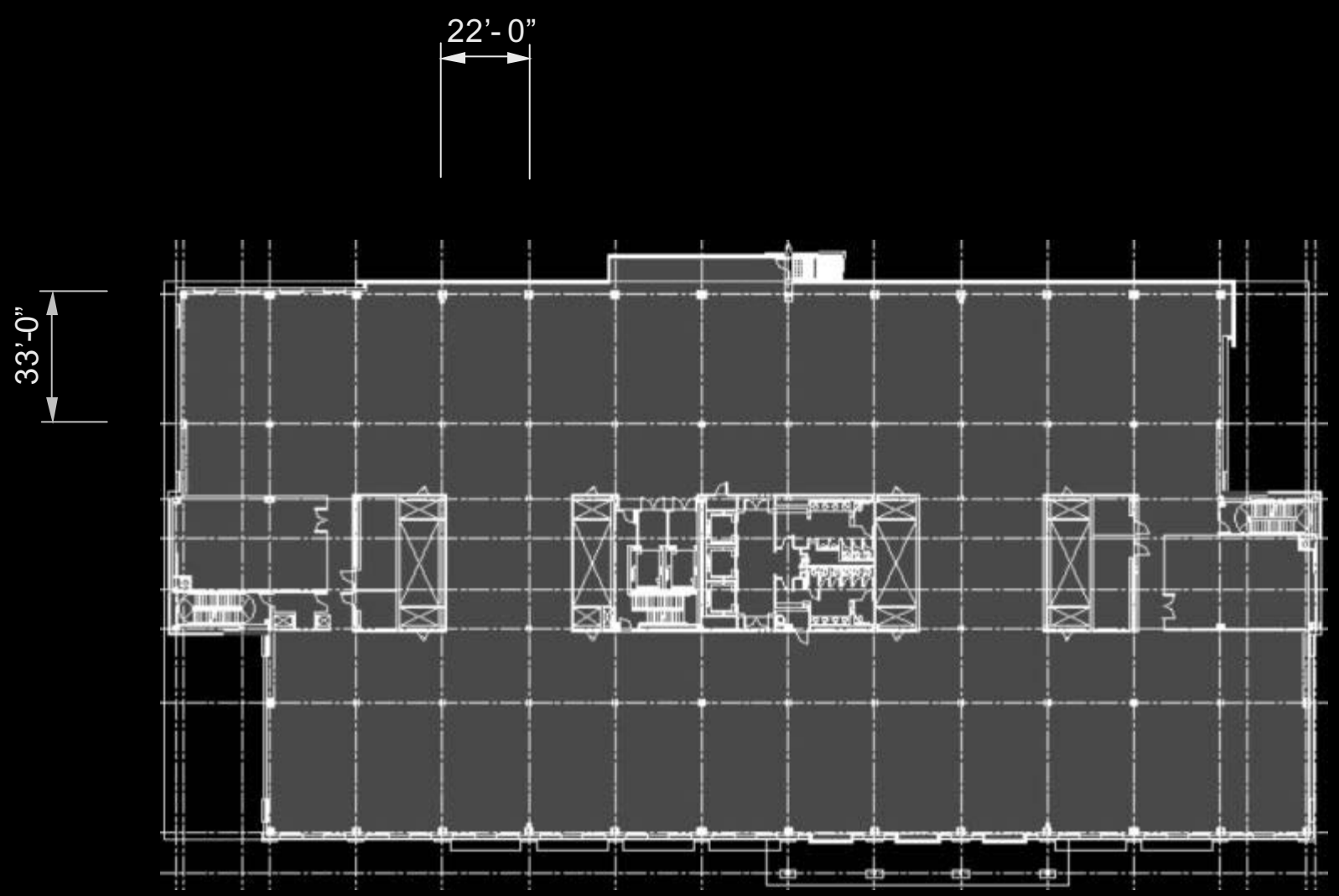
Savings Plus Value Added	
Avoiding downsizing:	$32 million (4.0 vs. 2.5 = 107k sf x $300/sf)
Inflation savings:	$6 million (18 mos. @ 4% x $100m)
Increased utilization:	$27 million (90,000 sf x $300/sf)
Professional fees	$ 1 million (7.5% vs. 8.5% x $100m)
Total:	**$66 million**



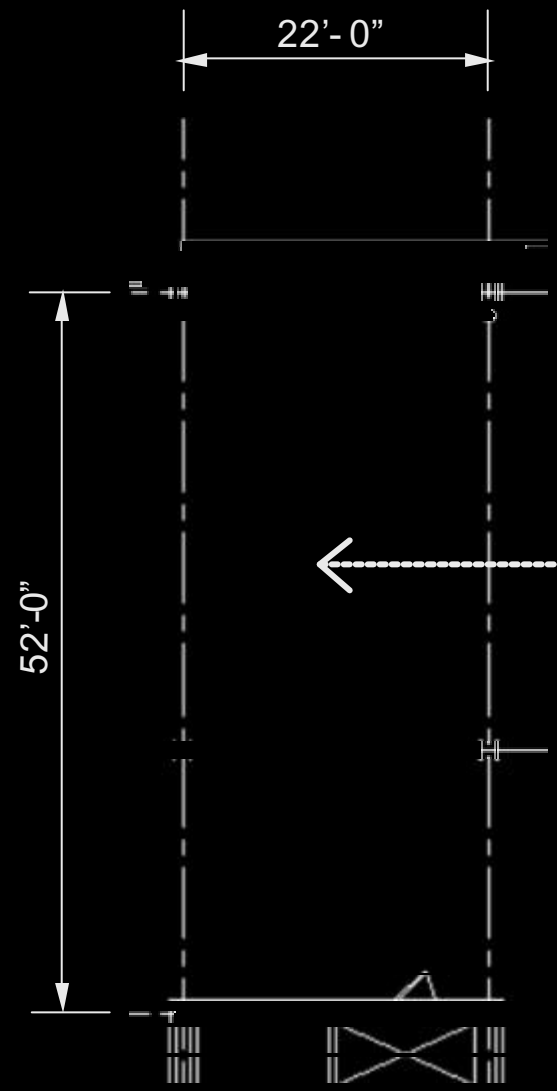
Typical Floor Plan: **Floor Plate Size: 39,000GSF**



Typical Floor Plan: **Building Core Elements**

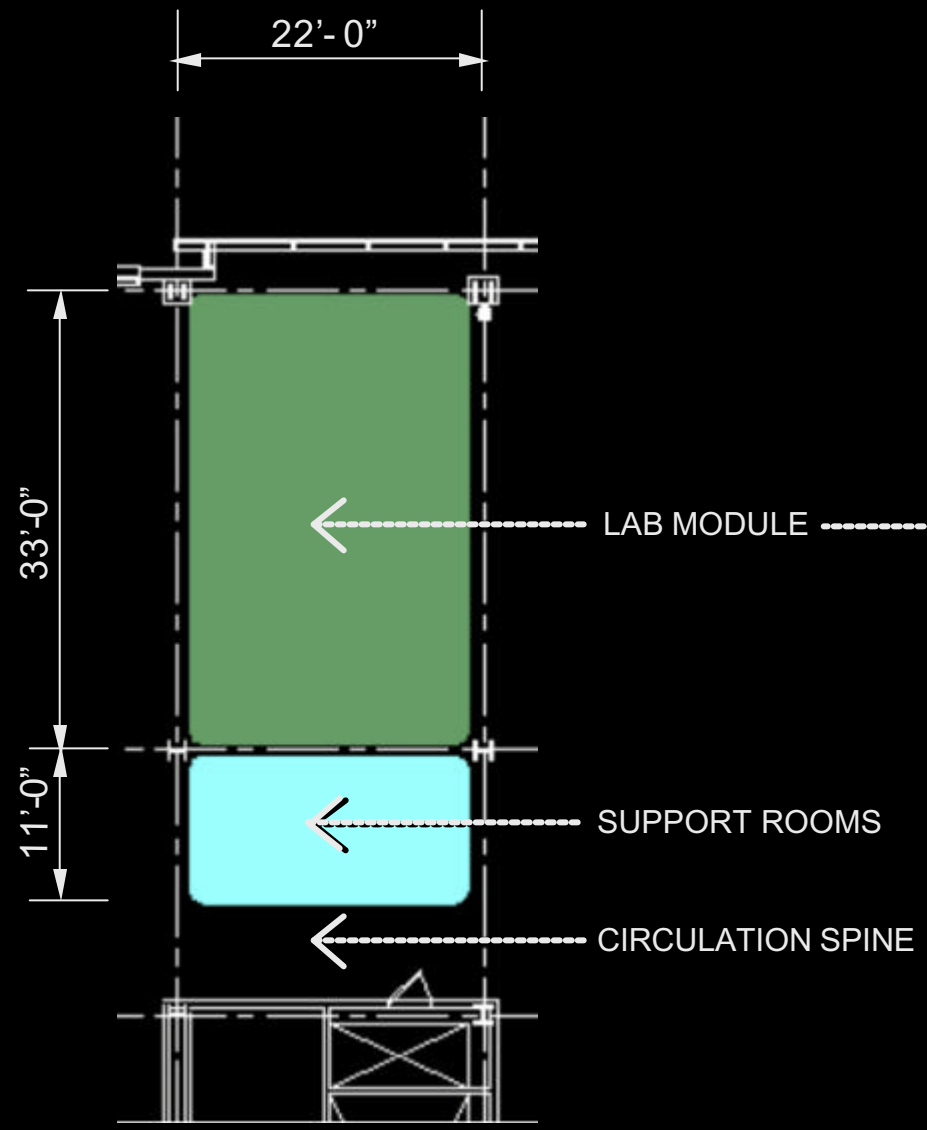


Typical Floor Plan: **Structural Grid**



TENANT READY
SHELL SPACE

“Bones and Zones”: Flexibility & Efficiency Planning



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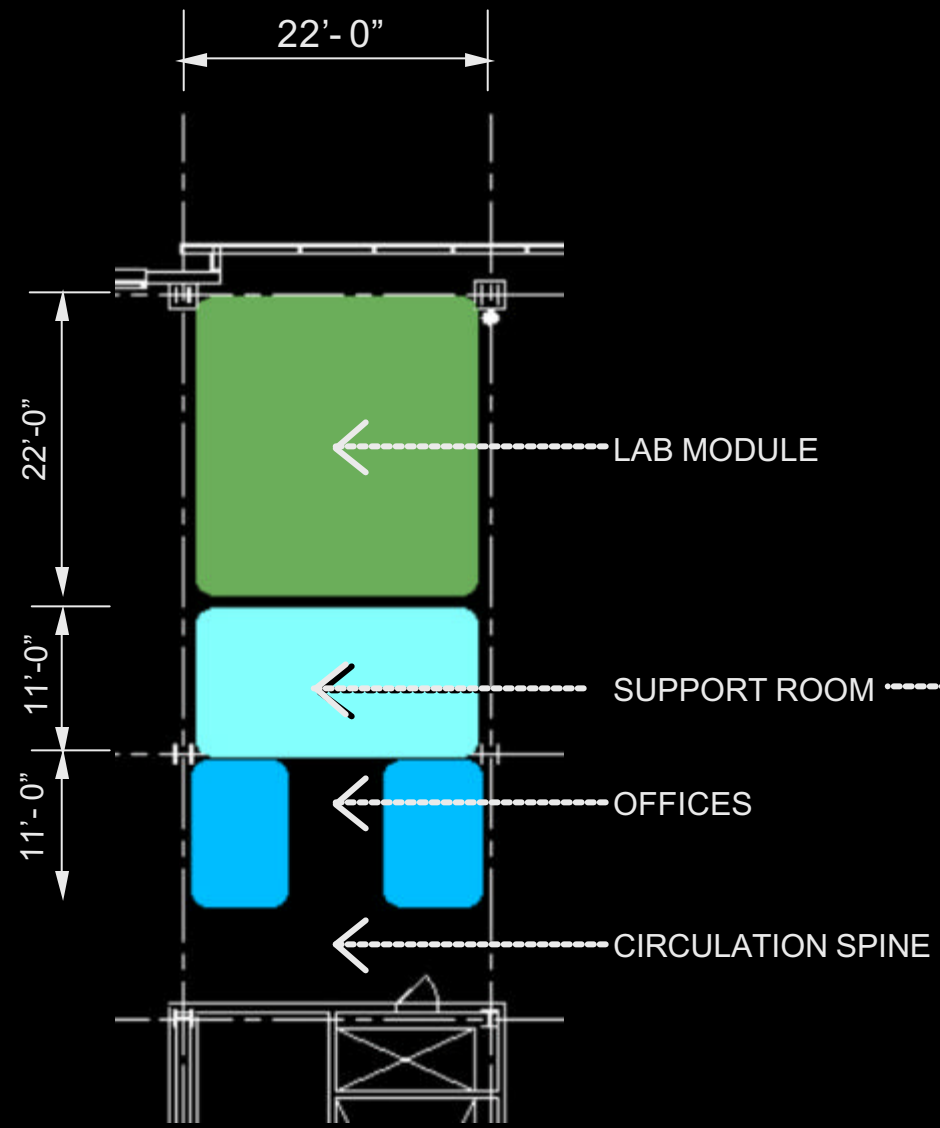

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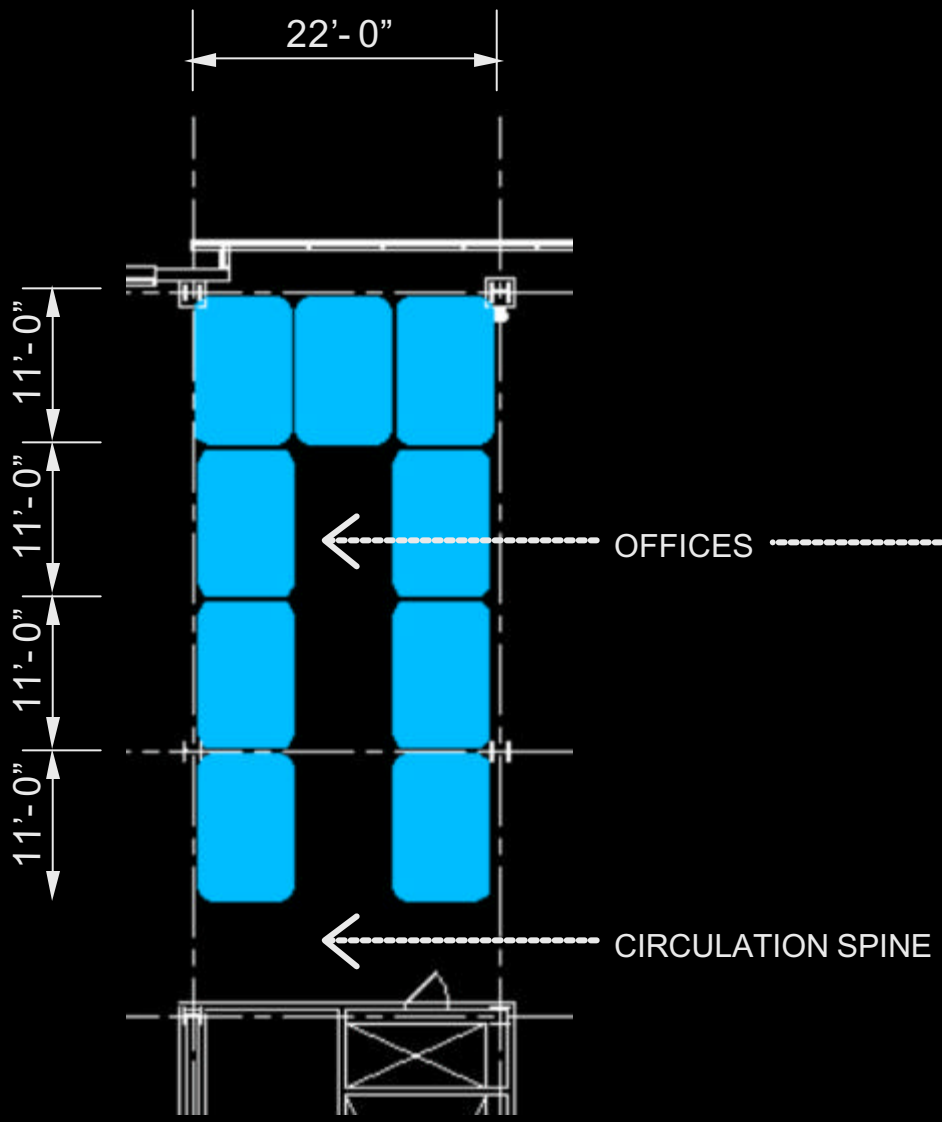

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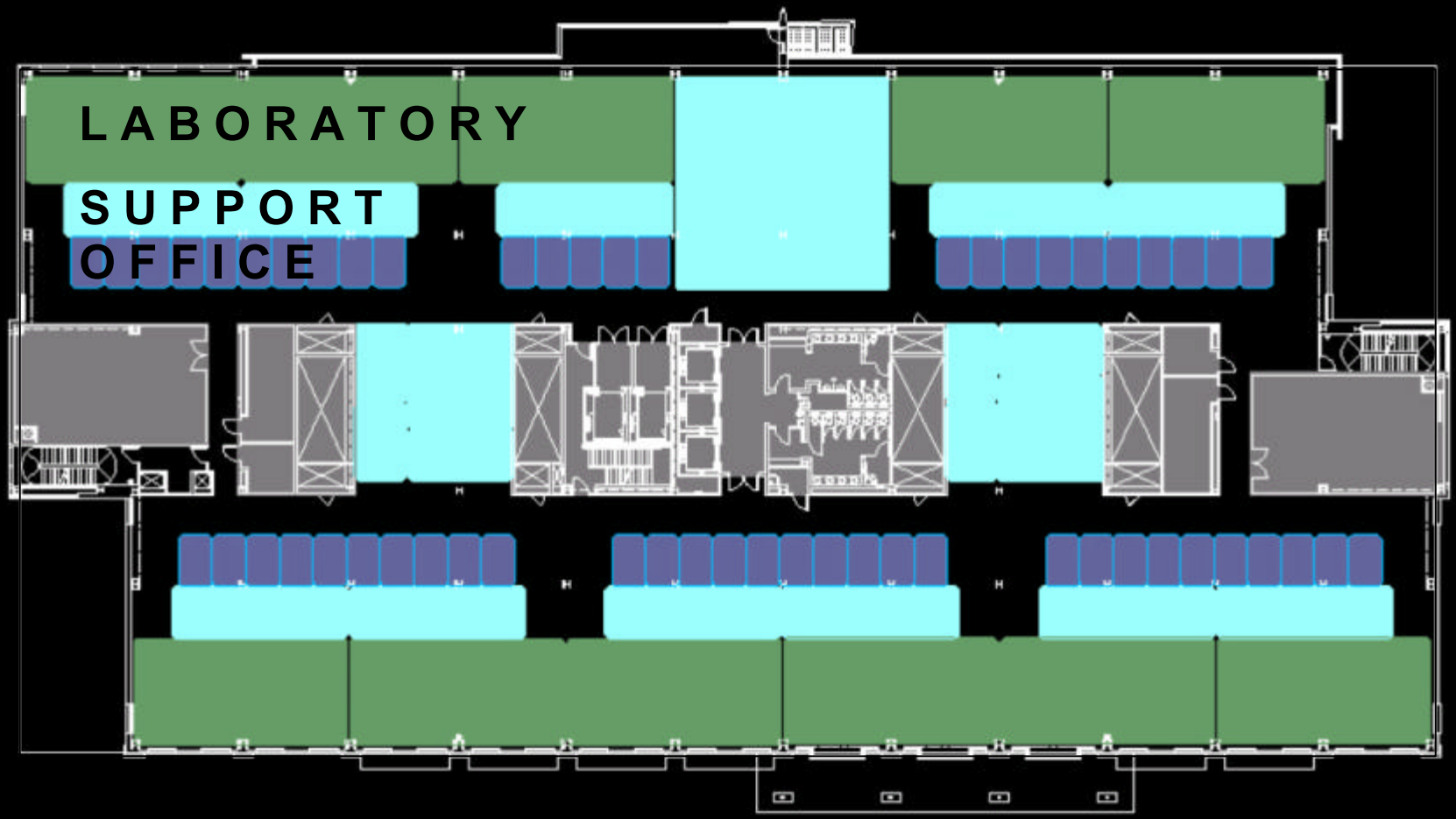
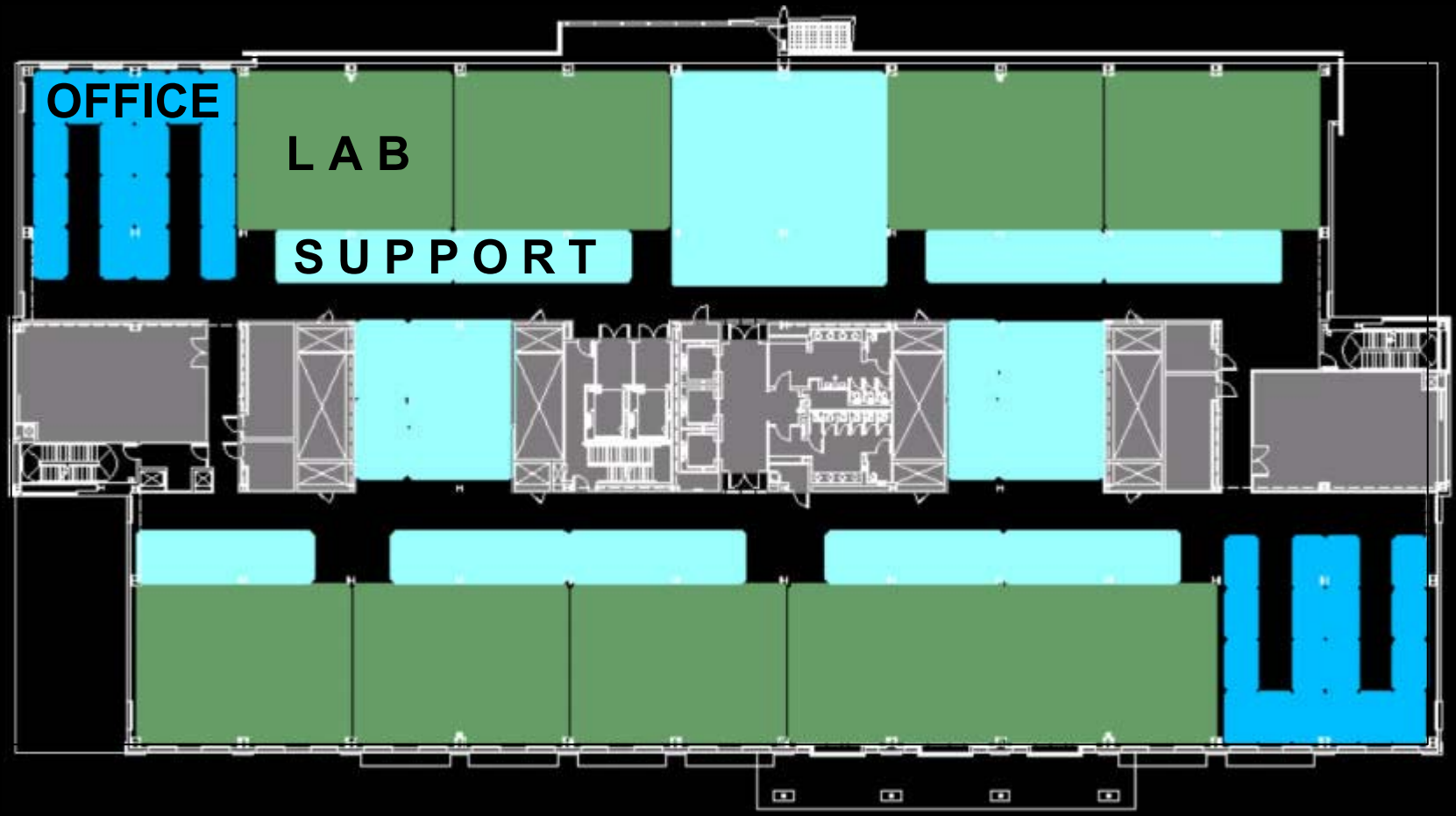
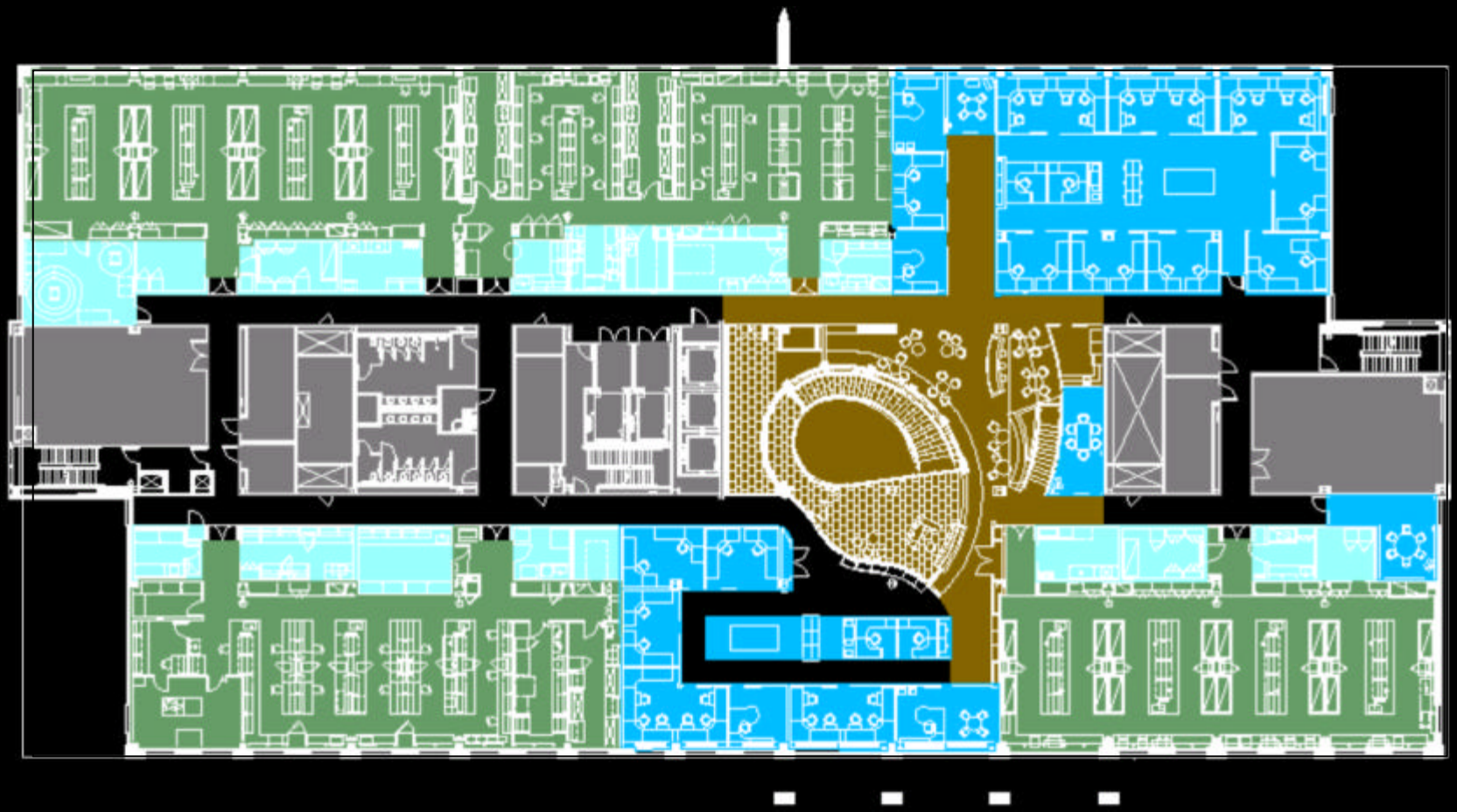


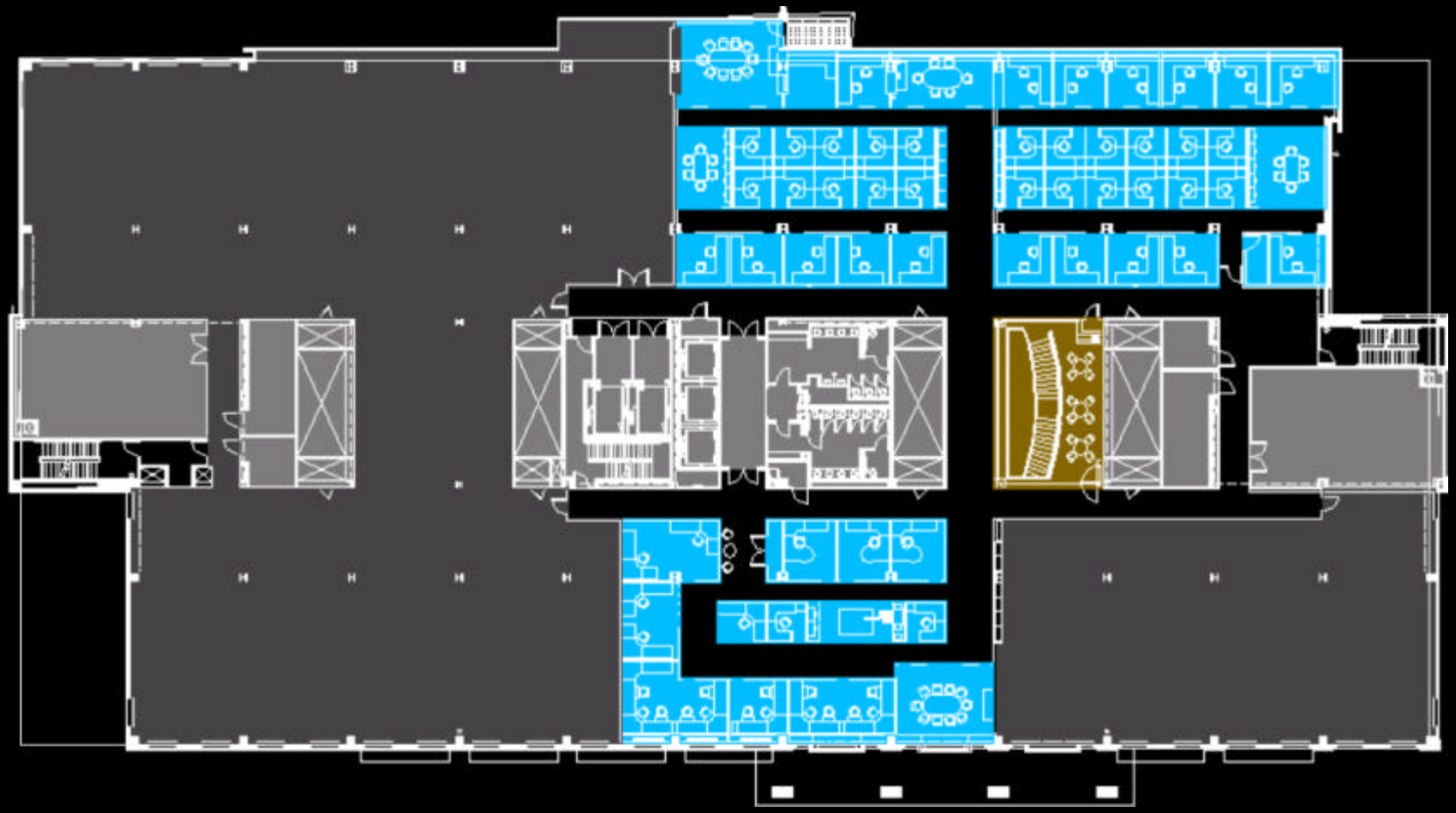
“Bones and Zones”: The Layered Layout



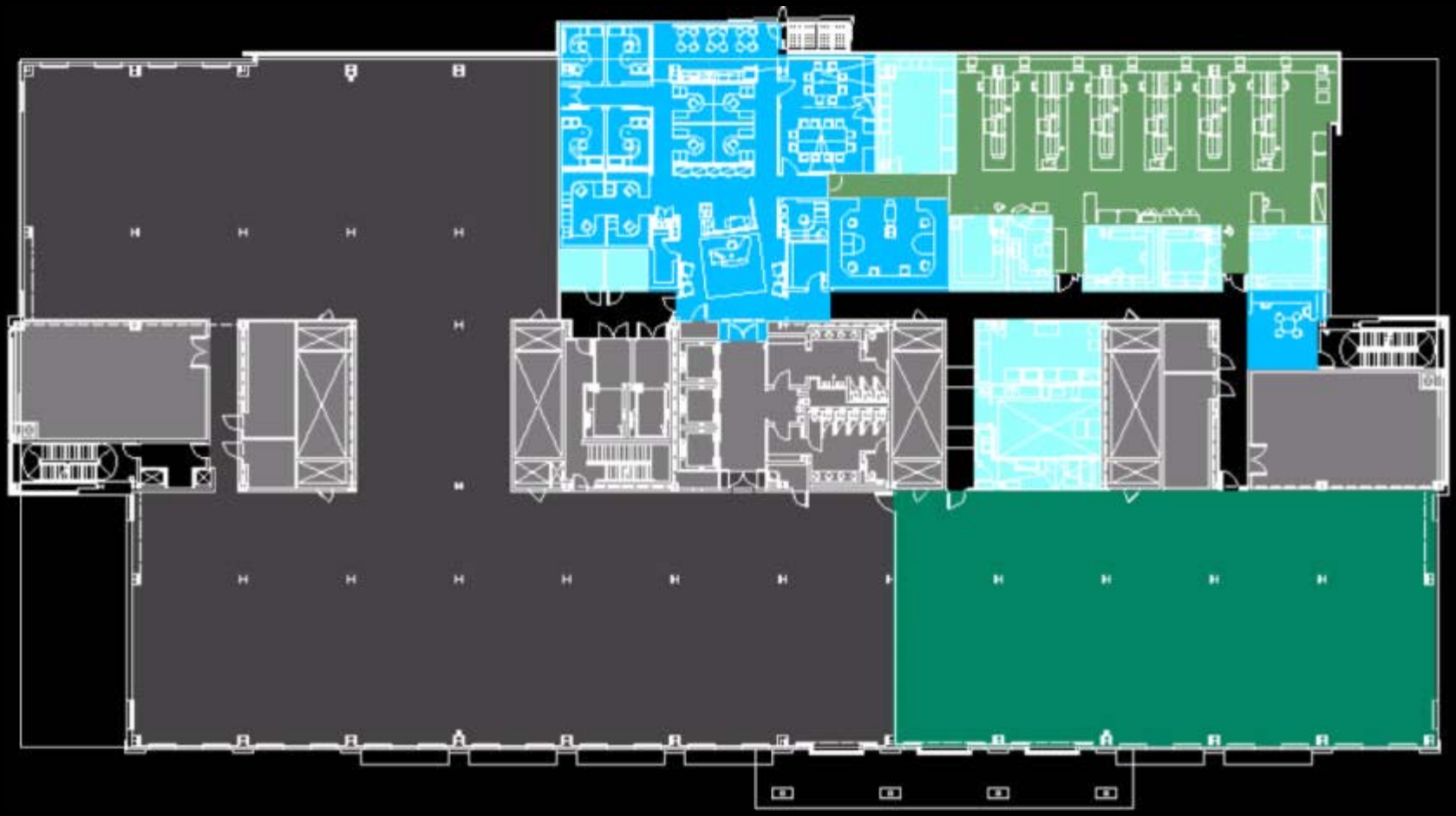
“Bones and Zones”: The Clustered Layout



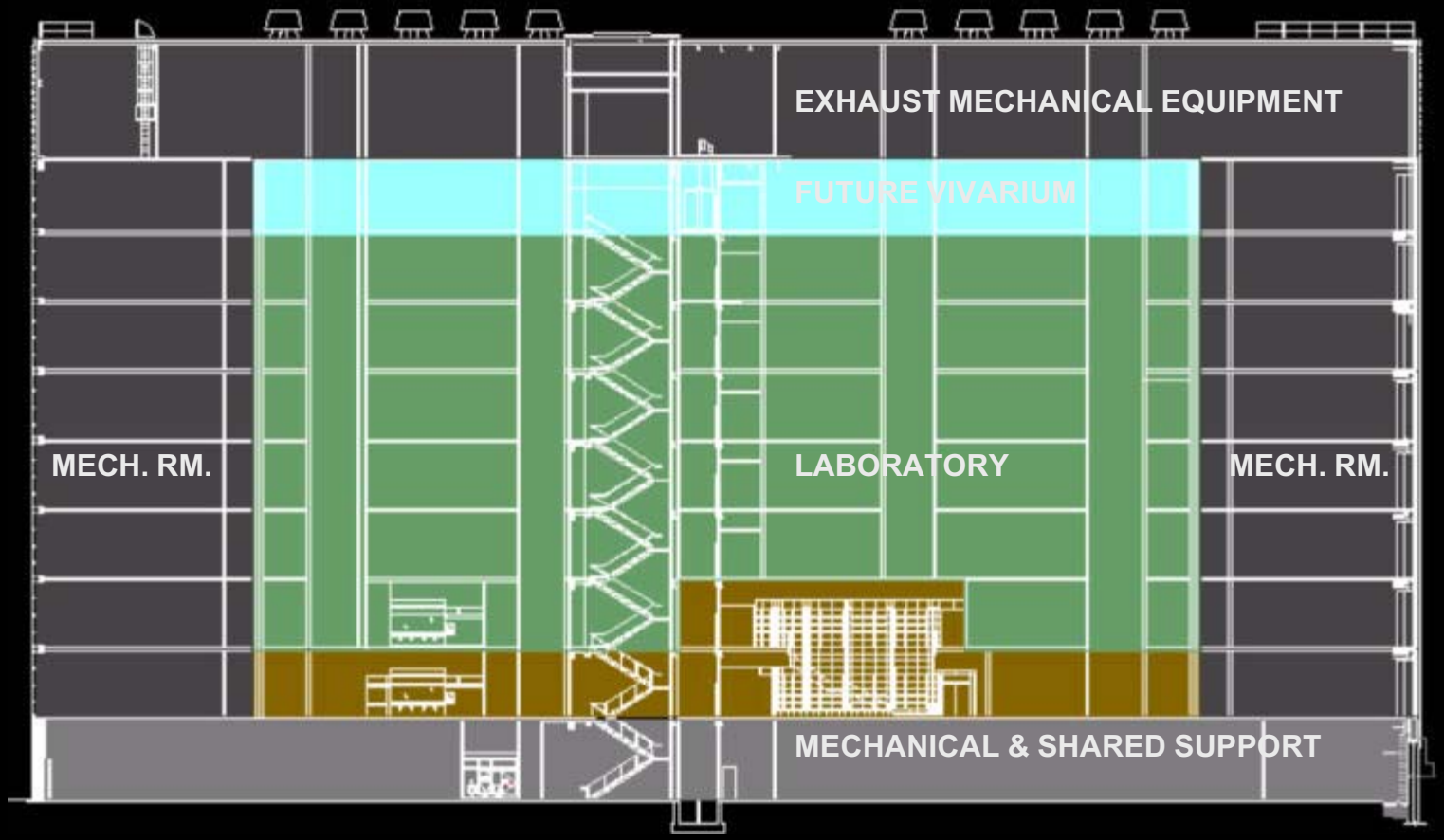
Second Floor Fit-up: Base Building Client



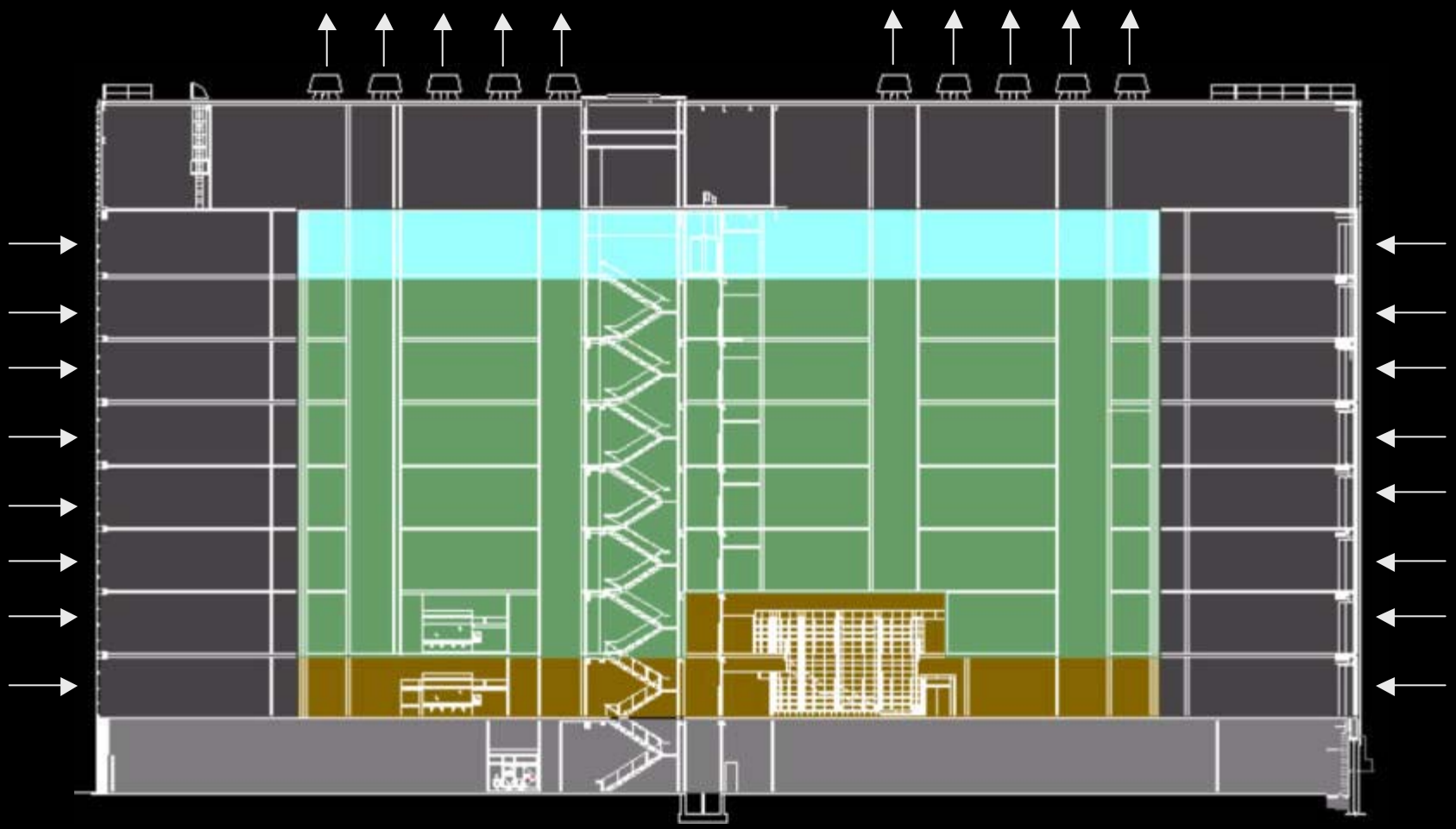
Third Floor Fit-up: Base Building Client



Fifth Floor Fit-up: Tenant Number Two

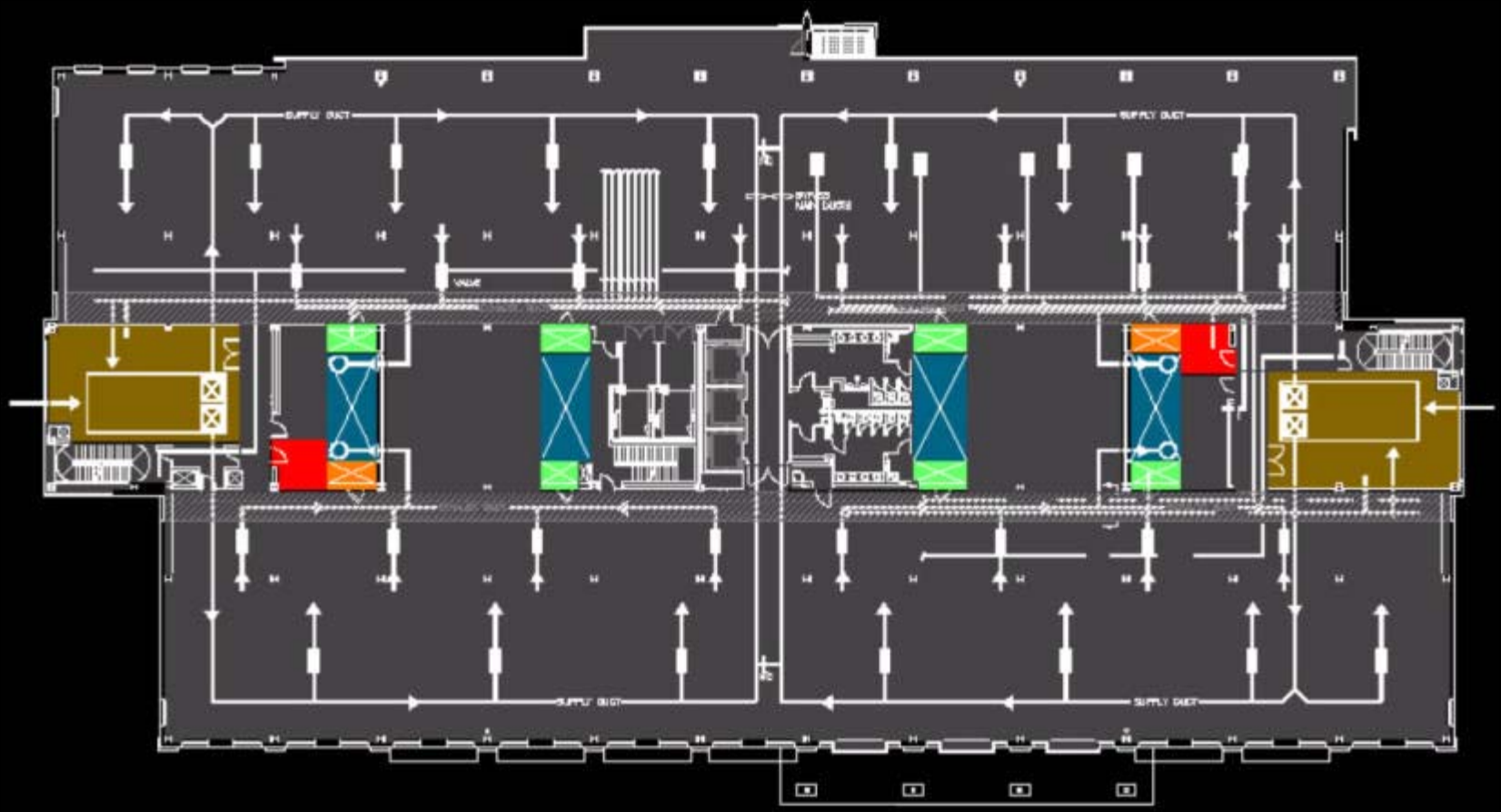


Building Section



- Multiple Biotech Tenants
- Varied Engineering Requirements
- Accommodate Change
- Uncompromised Safety

Mechanical Section Diagram



LABORATORY GRADE EXHAUST RISERS

LABORATORY PLUMBING RISERS

COMMUNICATION RISERS

"WHAT IF" CHASE SPACE

DISTRIBUTED MECHANICAL ROOMS

Mechanical Plan Diagram

- Tenant Flexibility
- Office, Biology, Chemistry, Vivarium
- Leasable Mechanical Space, Developer Model
- Point of Use Responsiveness

Mechanical Ductwork Plan

Hood Control Strategies

- Paired 8 ft Hoods With Restricted Sash
- Variable Volume Control
- Occupancy Sensors
- Planned Heat Recovery

Energy Optimization

- Right Sized Equipment
- Complete Air Side Management
- Central Refrigeration
- Enhanced Controls
- Energy Recovery
- Systems Commissioning

The Bottom Line

"This is the best lab, by far, that I have ever worked in… it will inspire us to do our best science…"

-David Armstead

AMGEN

Vice President